Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-418 (Canceled).

419. (New) A method of reducing the concentration of a metal in an animal in need thereof comprising administering to the animal an effective amount of a peptide having the formula:

$$P_1 - P_2,$$

wherein:

P_1 is:

Xaa_1 Xaa_2 His: or

Xaa_1 Xaa_2 His Xaa_3;

P_2 is $(Xaa_4)_n$;

Xaa_1 is glycine, alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, asparagine, glutamic acid, glutamine, lysine, hydroxylysine, histidine, arginine, ornithine, phenylalanine, tyrosine, tryptophan, cysteine, methionine, or α-hydroxymethylserine;

Xaa_2 is glycine, alanine, β-alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, asparagine, glutamic acid, glutamine, lysine, hydroxylysine, histidine, arginine, ornithine, phenylalanine, tyrosine, tryptophan, cysteine, methionine, or α-hydroxymethylserine;

Xaa_3 is glycine, alanine, valine, lysine, arginine, ornithine, aspartic acid, glutamic acid, asparagine, glutamine or tryptophan;

Xaa_4 is any amino acid; and

n is 0-100;

or a physiologically-acceptable salt thereof.

420. (New) The method of Claim 419 wherein:

Xaa_1 is glycine, alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, glutamic acid, lysine, hydroxylysine, histidine, arginine, or α-hydroxymethylserine,

Xaa_2 is glycine, alanine, valine, leucine, isoleucine, threonine, serine, asparagine, glutamine, methionine, lysine, hydroxylysine, histidine, arginine, or α-hydroxymethylserine, and

Xaa_3, when present, is alanine, aspartic acid or lysine.

421. (New) The method of Claim 420 wherein:

Xaa_1 is aspartic acid, glutamic acid, arginine, threonine, or α-hydroxymethylserine,

Xaa_2 is glycine, alanine, valine, leucine, isoleucine, threonine, serine, asparagine, methionine, histidine or α-hydroxymethylserine, and

Xaa_3, when present, is aspartic acid or lysine.

422. (New) The method of Claim 421 wherein Xaa_1 is aspartic acid or glutamic acid and Xaa_2 is alanine, glycine, valine, threonine, serine, leucine, or α-hydroxymethylserine.

423. (New) The method of Claim 422 wherein Xaa_1 is aspartic acid or glutamic acid and Xaa_2 is alanine, glycine, valine, leucine or isoleucine.

424. (New) The method of Claim 423 wherein P_1 is Asp Ala His, Asp Ala His Asp or Asp Ala His Lys.

425. (New) The method of Claim 424 wherein P_1 is Asp Ala His Lys.

426. (New) The method of Claim 420 wherein Xaa_1 is alanine, serine, threonine, aspartic acid, lysine or histidine and Xaa_2 is glycine, alanine, valine, leucine, isoleucine or histidine.

427. (New) The method of Claim 426 wherein P_1 is Ser Gly His, Thr Leu His or Ala Ala His. 428. The method of Claim 426 wherein P_1 is Lys His His Lys, Asp His His Ala, His Ala His Ala, Ala His His Ala or Asp His His Asp.

429. (New) The method of Claim 419 wherein n is 0-10.

430. (New) The method of Claim 419 wherein P_2 comprises a metal-binding sequence.

431. (New) The method of Claim 430 wherein P_2 comprises one of the following sequences:

$(Xaa_4)_m$ Xaa_3 His Xaa_2 Xaa_5,

$(Xaa_4)_m$ His Xaa_2 Xaa_5,

$(Xaa_4)_m$ Xaa_5 Xaa_2 His Xaa_3, or

$(Xaa_4)_m$ Xaa_5 Xaa_2 His,

wherein Xaa_5 is an amino acid having a free side-chain $-NH_2$ and m is 0-5.

432. (New) The method of Claim 431 wherein Xaa_5 is Orn or Lys.

433. (New) The method of Claim 430 wherein P_2 comprises one of the following sequences:

$[(Xaa_4)_mXaa_5Xaa_2HisXaa_3]_r$,

$[(Xaa_4)_mXaa_5Xaa_2His]_r$,

$[(Xaa_4)_mXaa_5Xaa_2HisXaa_3(Xaa_4)_mXaa_5Xaa_2His]_r$, or

$[(Xaa_4)_mXaa_5Xaa_2His(Xaa_4)_mXaa_5Xaa_2HisXaa_3]_r$,

wherein Xaa_5 is an amino acid having a free side-chain $-NH_2$, m is 0-5 and r is 2-100.

434. (New) The method of Claim 430 wherein P_2 comprises a sequence which binds Cu(I).

435. (New) The method of Claim 434 wherein P_2 comprises one of the following sequences:

Met Xaa_4 Met,

Met Xaa_4 Xaa_4 Met,

Cys Cys,

Cys Xaa_4 Cys,

Cys Xaa_4 Xaa_4 Cys,

Met Xaa_4 Cys Xaa_4 Xaa_4 Cys,

Gly Met Xaa_4 Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:7],

Gly Met Thr Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:8],

Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9], or

γ-Glu Cys Gly.

436. (New) The method of Claim 435 wherein P_2 is Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9].

437. (New) The method of Claim 419 wherein P_2 comprises a sequence which enhances the ability of the peptide to penetrate cell membranes, reach target tissues, or both.

438. (New) The method of Claim 437 wherein P_2 is hydrophobic or an arginine oligomer.

439. (New) The method of Claim 419 wherein at least one of the amino acids of P_1 other than β-alanine, when present, is a D-amino acid.

440. (New) The method of Claim 439 wherein Xaa_1 is a D-amino acid, His is a D-amino acid, or both Xaa_1 and His are D-amino acids.

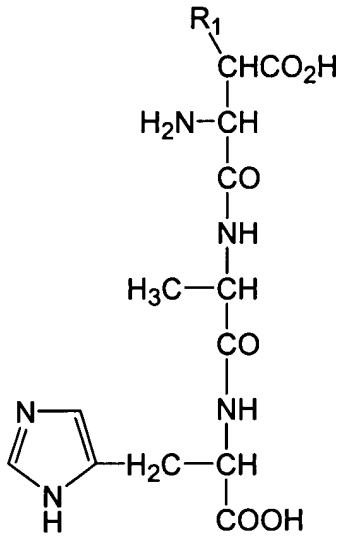
441. (New) The method of Claim 440 wherein all of the amino acids of P_1 other than β-alanine, when present, are D-amino acids.

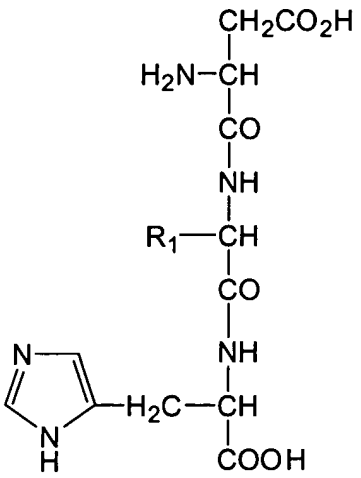
442. (New) The method of Claim 439 wherein at least 50% of the amino acids of P_2 are D-amino acids.

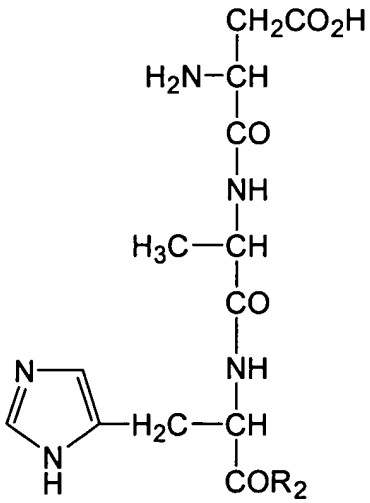
443. (New) The method of Claim 419 wherein at least one amino acid of P_1, at least one amino acid of P_2, or at least one amino acid of P_1 and at least one amino acid of P_2 is substituted with (a) a substituent that increases the lipophilicity of the peptide without altering the ability of P_1 to bind metal ions, (b) a substituent that protects the peptide from proteolytic enzymes without altering the ability of P_1 to bind metal ions, or (c) a substituent which is a non-peptide, metal-binding functional group that improves the ability of the peptide to bind metal ions.

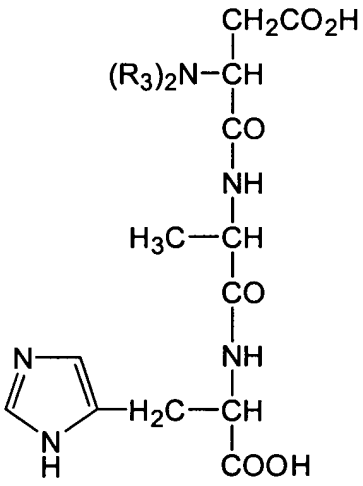
444. (New) The method of Claim 443 wherein the terminal -COOH of P_1 or P_2 is substituted to produce $-COR_2$, wherein R_2 is $-NH_2$, $-NHR_1$, $-N(R_1)_2$, $-OR_1$, or $-R_1$, wherein R_1 is an alkyl, aryl or heteroaryl.

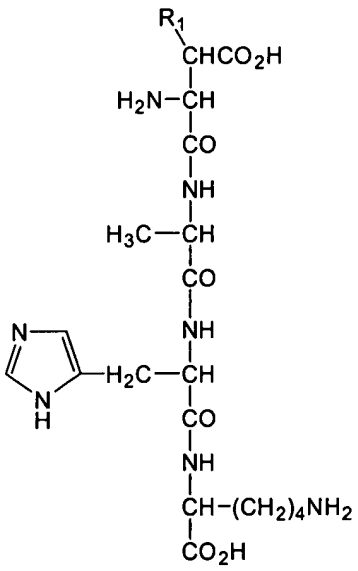
445. (New) The method of Claim 443 wherein n is 0 and P_1 has one of the following formulas:

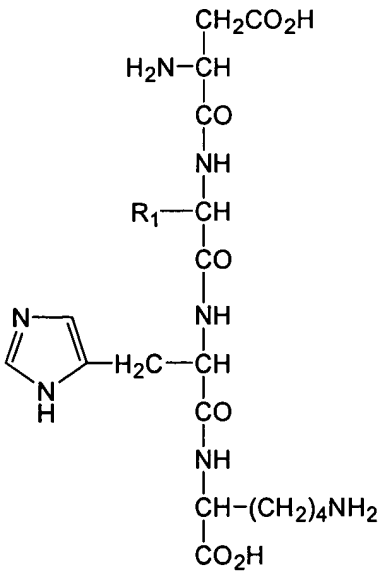


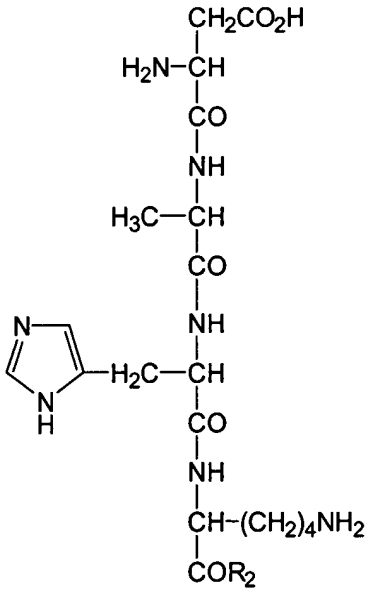


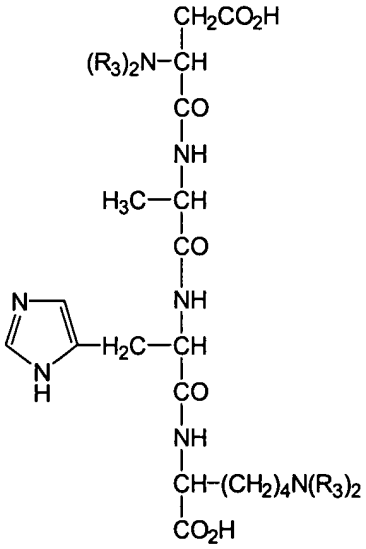












wherein:

R_1 is an alkyl, aryl, or heteroaryl;

R_2 is $-NH_2$, $-NHR_1$, $N(R_1)_2$, $-OR_1$, or R_1; and

R_3 is H, a non-peptide, metal-binding functional group or the two R_3 groups together form a non-peptide, metal-binding functional group.

446. (New) The method of Claim 445 wherein R_2 is $-NH_2$.

447. (New) The method of Claim 419 wherein the method further comprises administering an effective amount of another metal-binding compound in combination with the peptide.

448. (New) The method of Claim 447 wherein the metal-binding compound binds iron.

449. (New) The method of Claim 448 wherein the iron-binding compound is deferoxamine mesylate.

450. (New) The method of Claim 447 wherein the metal-binding compound binds Cu(I).

451. (New) The method of Claim 450 wherein the Cu(I)-binding compound is a peptide.

452. (New) The method of Claim 451 wherein the Cu(I)-binding peptide comprises one of the following sequences:

Met Xaa_4 Met,

Met Xaa_4 Xaa_4 Met,

Cys Cys

Cys Xaa_4 Cys,

Cys Xaa_4 Xaa_4 Cys,

Met Xaa_4 Cys Xaa_4 Xaa_4 Cys,

Gly Met Xaa_4 Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:7],

Gly Met Thr Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:8],

Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9], or

γ-Glu Cys Gly,

wherein Xaa_4 is any amino acid.

453. (New) A method of treating an angiogenic disease or condition in an animal comprising administering to the animal an effective amount of a peptide having the formula:

$$P_1 - P_2,$$

wherein:

P_1 is:

Xaa_1 Xaa_2 His: or

Xaa_1 Xaa_2 His Xaa_3;

P_2 is $(Xaa_4)_n$;

Xaa_1 is glycine, alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, asparagine, glutamic acid, glutamine, lysine, hydroxylysine, histidine, arginine, ornithine, phenylalanine, tyrosine, tryptophan, cysteine, methionine, or α-hydroxymethylserine;

Xaa_2 is glycine, alanine, β-alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, asparagine, glutamic acid, glutamine, lysine, hydroxylysine, histidine, arginine, ornithine, phenylalanine, tyrosine, tryptophan, cysteine, methionine, or α-hydroxymethylserine;

Xaa_3 is glycine, alanine, valine, lysine, arginine, ornithine, aspartic acid, glutamic acid, asparagine, glutamine or tryptophan;

Xaa_4 is any amino acid; and

n is 0-100;

or a physiologically-acceptable salt thereof.

454. (New) The method of Claim 453 wherein:

Xaa_1 is glycine, alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, glutamic acid, lysine, hydroxylysine, histidine, arginine, or α-hydroxymethylserine,

Xaa_2 is glycine, alanine, valine, leucine, isoleucine, threonine, serine, asparagine, glutamine, methionine, lysine, hydroxylysine, histidine, arginine, or α-hydroxymethylserine, and

Xaa_3, when present, is alanine, aspartic acid or lysine.

455. (New) The method of Claim 454 wherein:

Xaa_1 is aspartic acid, glutamic acid, arginine, threonine, or α-hydroxymethylserine,

Xaa_2 is glycine, alanine, valine, leucine, isoleucine, threonine, serine, asparagine, methionine, histidine or α-hydroxymethylserine, and

Xaa_3, when present, is aspartic acid or lysine.

456. (New) The method of Claim 455 wherein Xaa_1 is aspartic acid or glutamic acid and Xaa_2 is alanine, glycine, valine, threonine, serine, leucine, or α-hydroxymethylserine.

457. (New) The method of Claim 456 wherein Xaa_1 is aspartic acid or glutamic acid and Xaa_2 is alanine, glycine, valine, leucine or isoleucine.

458. (New) The method of Claim 457 wherein P_1 is Asp Ala His, Asp Ala His Asp or Asp Ala His Lys.

459. (New) The method of Claim 458 wherein P_1 is Asp Ala His Lys.

460. (New) The method of Claim 454 wherein Xaa_1 is alanine, serine, threonine, aspartic acid, lysine or histidine and Xaa_2 is glycine, alanine, valine, leucine, isoleucine or histidine.

461. (New) The method of Claim 460 wherein P_1 is Ser Gly His, Thr Leu His or Ala Ala His.

462. (New) The method of Claim 460 wherein P_1 is Lys His His Lys, Asp His His Ala, His Ala His Ala, Ala His His Ala or Asp His His Asp.

463. (New) The method of Claim 453 wherein n is 0-10.

464. (New) The method of Claim 453 wherein P_2 comprises a metal-binding sequence.

465. (New) The method of Claim 464 wherein P_2 comprises one of the following sequences:

$(Xaa_4)_m$ Xaa_3 His Xaa_2 Xaa_5,

$(Xaa_4)_m$ His Xaa_2 Xaa_5,

$(Xaa_4)_m$ Xaa_5 Xaa_2 His Xaa_3, or

$(Xaa_4)_m$ Xaa_5 Xaa_2 His,

wherein Xaa_5 is an amino acid having a free side-chain $-NH_2$ and m is 0-5.

466. (New) The method of Claim 465 wherein Xaa_5 is Orn or Lys.

467. (New) The method of Claim 464 wherein P_2 comprises one of the following sequences:

$[(Xaa_4)_mXaa_5Xaa_2HisXaa_3]_r$,

$[(Xaa_4)_mXaa_5Xaa_2His]_r$,

$[(Xaa_4)_mXaa_5Xaa_2HisXaa_3(Xaa_4)_mXaa_5Xaa_2His]_r$, or

$[(Xaa_4)_mXaa_5Xaa_2His(Xaa_4)_mXaa_5Xaa_2HisXaa_3]_r$,

wherein Xaa_5 is an amino acid having a free side-chain $-NH_2$, m is 0-5 and r is 2-100.

468. (New) The method of Claim 464 wherein P_2 comprises a sequence which binds Cu(I).

469. (New) The method of Claim 468 wherein P_2 comprises one of the following sequences:

Met Xaa_4 Met,

Met Xaa_4 Xaa_4 Met,

Cys Cys,

Cys Xaa_4 Cys,

Cys Xaa_4 Xaa_4 Cys,

Met Xaa_4 Cys Xaa_4 Xaa_4 Cys,

Gly Met Xaa_4 Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:7],

Gly Met Thr Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:8],

Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9], or

γ-Glu Cys Gly.

470. (New) The method of Claim 469 wherein P_2 is Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9].

471. (New) The method of Claim 453 wherein P_2 comprises a sequence which enhances the ability of the peptide to penetrate cell membranes, reach target tissues, or both.

472. (New) The method of Claim 471 wherein P_2 is hydrophobic or an arginine oligomer.

473. (New) The method of Claim 453 wherein at least one of the amino acids of P_1 other than β-alanine, when present, is a D-amino acid.

474. (New) The method of Claim 473 wherein Xaa_1 is a D-amino acid, His is a D-amino acid, or both Xaa_1 and His are D-amino acids.

475. (New) The method of Claim 474 wherein all of the amino acids of P_1 other than β-alanine, when present, are D-amino acids.

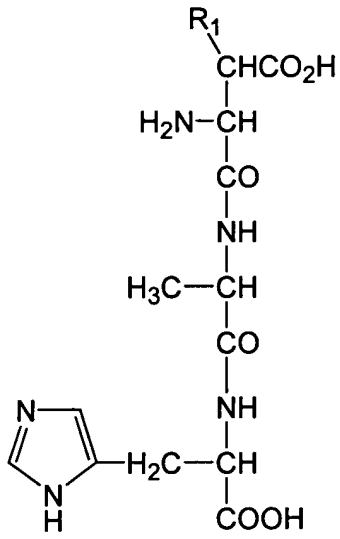
476. (New) The method of Claim 475 wherein at least 50% of the amino acids of P_2 are D-amino acids.

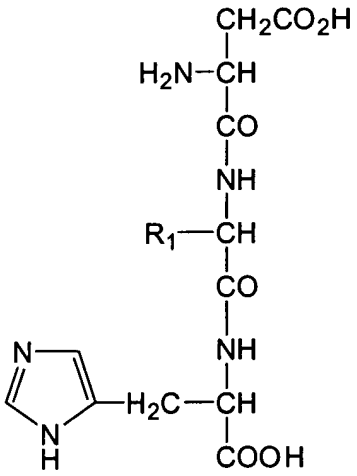
477. (New) The method of Claim 453 wherein at least one amino acid of P_1, at least one amino acid of P_2, or at least one amino acid of P_1 and at least one amino acid of P_2 is substituted with (a) a substituent that increases the lipophilicity of the peptide without altering the ability of P_1 to bind metal ions, (b) a substituent that protects the peptide from proteolytic enzymes without altering

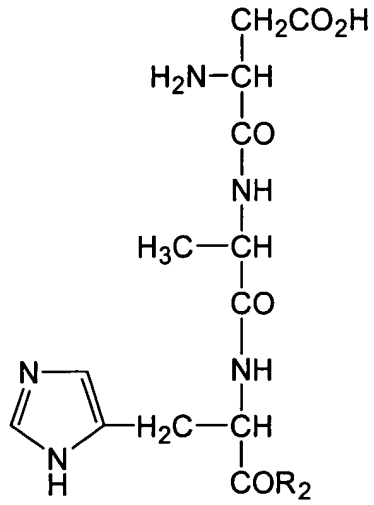
the ability of P_1 to bind metal ions, or (c) a substituent which is a non-peptide, metal-binding functional group that improves the ability of the peptide to bind metal ions.

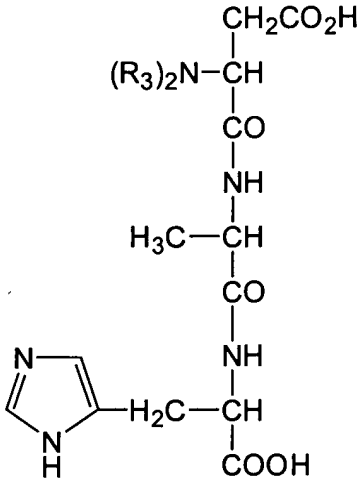
478. (New) The method of Claim 477 wherein the terminal -COOH of P_1 or P_2 is substituted to produce $-COR_2$, wherein R_2 is $-NH_2$, $-NHR_1$, $-N(R_1)_2$, $-OR_1$, or $-R_1$, wherein R_1 is an alkyl, aryl or heteroaryl.

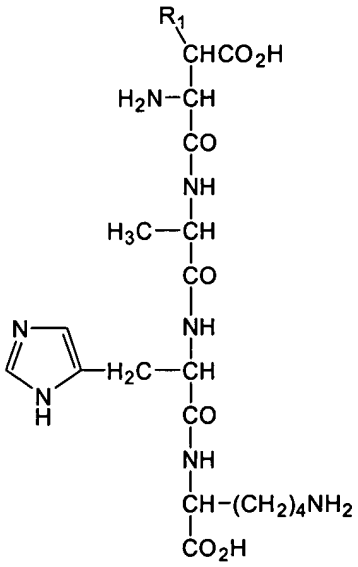
479. (New) The method of Claim 477 wherein n is 0 and P_1 has one of the following formulas:

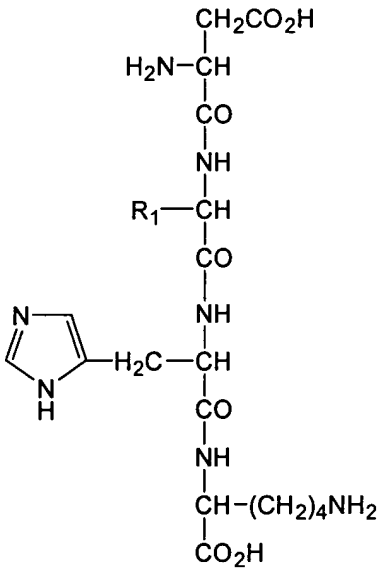


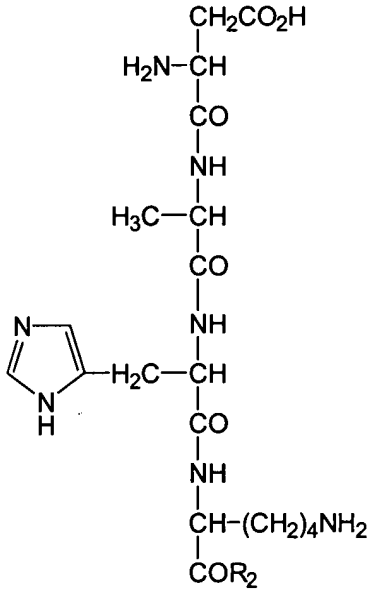


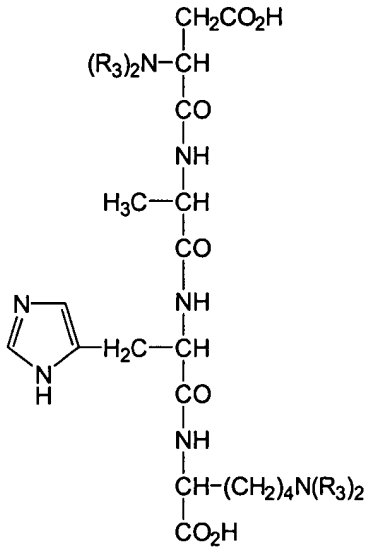












wherein:

R_1 is an alkyl, aryl, or heteroaryl;

R_2 is $-NH_2$, $-NHR_1$, $N(R_1)_2$, $-OR_1$, or R_1; and

R_3 is H, a non-peptide, metal-binding functional group or the two R_3 groups together form a non-peptide, metal-binding functional group.

480. (New) The method of Claim 479 wherein R_2 is $-NH_2$.

481. The method of Claim 453 wherein the method further comprises administering an effective amount of another metal-binding compound in combination with the peptide.

482. (New) The method of Claim 481 wherein the metal-binding compound binds iron.

484. (New) The method of Claim 482 wherein the iron-binding compound is deferoxamine mesylate.

485. (New) The method of Claim 481 wherein the metal-binding compound binds Cu(I).

486. (New) The method of Claim 485 wherein the Cu(I)-binding compound is a peptide.

487. (New) The method of Claim 486 wherein the Cu(I)-binding peptide comprises one of the following sequences:

Met Xaa_4 Met,

Met Xaa_4 Xaa_4 Met,

Cys Cys

Cys Xaa_4 Cys,

Cys Xaa_4 Xaa_4 Cys,

Met Xaa_4 Cys Xaa_4 Xaa_4 Cys,

Gly Met Xaa_4 Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:7],

Gly Met Thr Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:8],

Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9], or

γ-Glu Cys Gly,

wherein Xaa_4 is any amino acid.

488. (New) The method of Claim 453 wherein the angiogenic disease or condition is a neoplastic disease, a connective tissue disorder, psoriasis, an ocular angiogenic disease, a cardiovascular disease, a cerebral vascular disease, hemophiliac joints, an immune disorder, a benign tumor, hypertrophy, endometriosis, polyposis, or obesity.

489. (New) The method of Claim 488 wherein the angiogenic disease or condition is a neoplastic disease is a tumor.

490. (New) The method of Claim 489 wherein the neoplastic disease is a tumor.

491. (New) The method of Claim 490 wherein the tumor is located in the bladder, brain, breast, cervix, colon, rectum, kidney, lung, ovary, pancreas, prostate, stomach or uterus.

492. (New) The method of Claim 489 wherein the neoplastic disease is tumor metastasis.

493. (New) A method of treating cancer or inhibiting carcinogenesis in an animal comprising administering to the animal an effective amount of a peptide having the formula:

$$P_1 - P_2,$$

wherein:

P_1 is:

Xaa_1 Xaa_2 His: or

Xaa_1 Xaa_2 His Xaa_3;

P_2 is $(Xaa_4)_n$;

Xaa_1 is glycine, alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, asparagine, glutamic acid, glutamine, lysine, hydroxylysine, histidine, arginine, ornithine, phenylalanine, tyrosine, tryptophan, cysteine, methionine, or α-hydroxymethylserine;

Xaa_2 is glycine, alanine, β-alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, asparagine, glutamic acid, glutamine, lysine, hydroxylysine, histidine, arginine, ornithine, phenylalanine, tyrosine, tryptophan, cysteine, methionine, or α-hydroxymethylserine;

Xaa_3 is glycine, alanine, valine, lysine, arginine, ornithine, aspartic acid, glutamic acid, asparagine, glutamine or tryptophan;

Xaa_4 is any amino acid; and

n is 0-100;

or a physiologically-acceptable salt thereof.

494. (New) The method of Claim 493 wherein:

Xaa_1 is glycine, alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, glutamic acid, lysine, hydroxylysine, histidine, arginine, or α-hydroxymethylserine,

Xaa_2 is glycine, alanine, valine, leucine, isoleucine, threonine, serine, asparagine, glutamine, methionine, lysine, hydroxylysine, histidine, arginine, or α-hydroxymethylserine, and

Xaa_3, when present, is alanine, aspartic acid or lysine.

495. (New) The method of Claim 494 wherein:

Xaa_1 is aspartic acid, glutamic acid, arginine, threonine, or α-hydroxymethylserine,

Xaa_2 is glycine, alanine, valine, leucine, isoleucine, threonine, serine, asparagine, methionine, histidine or α-hydroxymethylserine, and

Xaa_3, when present, is aspartic acid or lysine.

496. (New) The method of Claim 495 wherein Xaa_1 is aspartic acid or glutamic acid and Xaa_2 is alanine, glycine, valine, threonine, serine, leucine, or α-hydroxymethylserine.

497. (New) The method of Claim 496 wherein Xaa_1 is aspartic acid or glutamic acid and Xaa_2 is alanine, glycine, valine, leucine or isoleucine.

498. (New) The method of Claim 497 wherein P_1 is Asp Ala His, Asp Ala His Asp or Asp Ala His Lys.

499. (New) The method of Claim 498 wherein P_1 is Asp Ala His Lys.

500. (New) The method of Claim 494 wherein Xaa_1 is alanine, serine, threonine, aspartic acid, lysine or histidine and Xaa_2 is glycine, alanine, valine, leucine, isoleucine or histidine.

501. (New) The method of Claim 500 wherein P_1 is Ser Gly His, Thr Leu His or Ala Ala His.

502. (New) The method of Claim 500 wherein P_1 is Lys His His Lys, Asp His His Ala, His Ala His Ala, Ala His His Ala or Asp His His Asp.

503. (New) The method of Claim 493 wherein n is 0-10.

504. (New) The method of Claim 493 wherein P_2 comprises a metal-binding sequence.

505. (New) The method of Claim 504 wherein P_2 comprises one of the following sequences:

$(Xaa_4)_m$ Xaa_3 His Xaa_2 Xaa_5,

$(Xaa_4)_m$ His Xaa_2 Xaa_5,

$(Xaa_4)_m$ Xaa_5 Xaa_2 His Xaa_3, or

$(Xaa_4)_m$ Xaa_5 Xaa_2 His,

wherein Xaa_5 is an amino acid having a free side-chain $-NH_2$ and m is 0-5.

506. (New) The method of Claim 505 wherein Xaa_5 is Orn or Lys.

507. (New) The method of Claim 504 wherein P_2 comprises one of the following sequences:

$[(Xaa_4)_mXaa_5Xaa_2HisXaa_3]_r$,

$[(Xaa_4)_mXaa_5Xaa_2His]_r$,

$[(Xaa_4)_mXaa_5Xaa_2HisXaa_3(Xaa_4)_mXaa_5Xaa_2His]_r$, or

$[(Xaa_4)_mXaa_5Xaa_2His(Xaa_4)_mXaa_5Xaa_2HisXaa_3]_r$,

wherein Xaa_5 is an amino acid having a free side-chain $-NH_2$, m is 0-5 and r is 2-100.

508. (New) The method of Claim 504 wherein P_2 comprises a sequence which binds Cu(I).

509. (New) The method of Claim 508 wherein P_2 comprises one of the following sequences:

Met Xaa_4 Met,

Met Xaa_4 Xaa_4 Met,

Cys Cys,

Cys Xaa_4 Cys,

Cys Xaa_4 Xaa_4 Cys,

Met Xaa_4 Cys Xaa_4 Xaa_4 Cys,

Gly Met Xaa_4 Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:7],

Gly Met Thr Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:8],

Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9], or

γ-Glu Cys Gly.

510. (New) The method of Claim 509 wherein P_2 is Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9].

511. (New) The method of Claim 493 wherein P_2 comprises a sequence which enhances the ability of the peptide to penetrate cell membranes, reach target tissues, or both.

512. (New) The method of Claim 511 wherein P_2 is hydrophobic or an arginine oligomer.

513. (New) The method of Claim 493 wherein at least one of the amino acids of P_1 other than β-alanine, when present, is a D-amino acid.

514. (New) The method of Claim 513 wherein Xaa_1 is a D-amino acid, His is a D-amino acid, or both Xaa_1 and His are D-amino acids.

515. (New) The method of Claim 514 wherein all of the amino acids of P_1 other than β-alanine, when present, are D-amino acids.

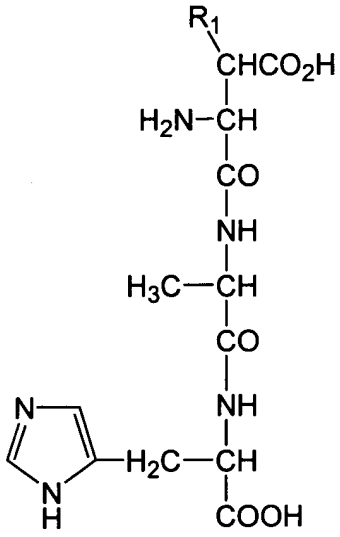
516. (New) The method of Claim 513 wherein at least 50% of the amino acids of P_2 are D-amino acids.

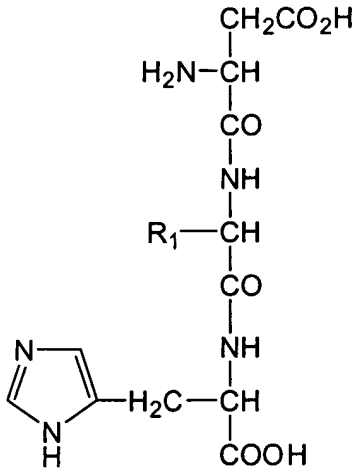
517. (New) The method of Claim 493 wherein at least one amino acid of P_1, at least one amino acid of P_2, or at least one amino acid of P_1 and at least one amino acid of P_2 is substituted with (a) a substituent that increases the lipophilicity of the peptide without altering the ability of P_1 to bind metal ions, (b) a substituent that protects the peptide from proteolytic enzymes without altering

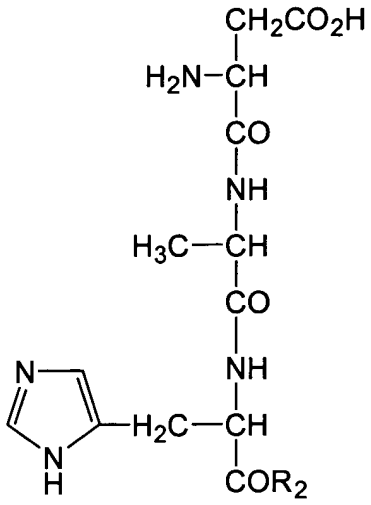
the ability of P_1 to bind metal ions, or (c) a substituent which is a non-peptide, metal-binding functional group that improves the ability of the peptide to bind metal ions.

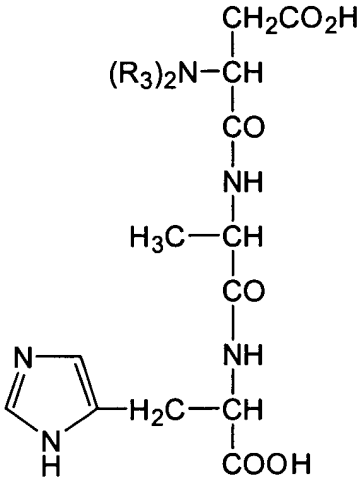
518. (New) The method of Claim 517 wherein the terminal -COOH of P_1 or P_2 is substituted to produce $-COR_2$, wherein R_2 is $-NH_2$, $-NHR_1$, $-N(R_1)_2$, $-OR_1$, or $-R_1$, wherein R_1 is an alkyl, aryl or heteroaryl.

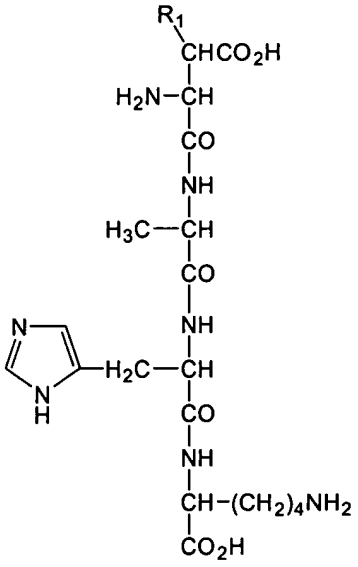
519. (New) The method of Claim 517 wherein n is 0 and P_1 has one of the following formulas:

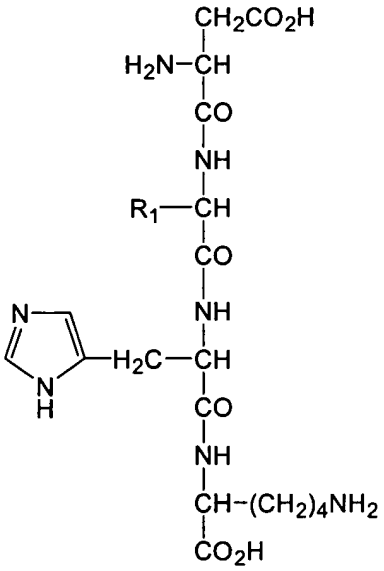


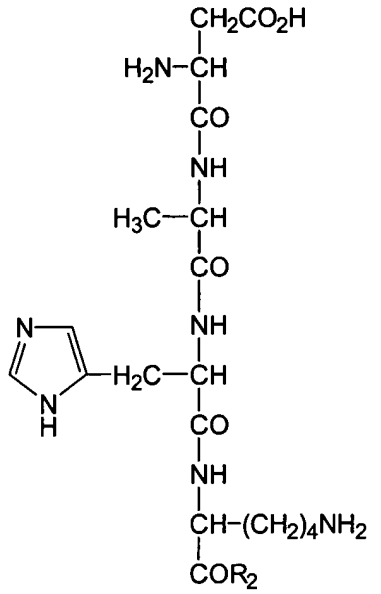


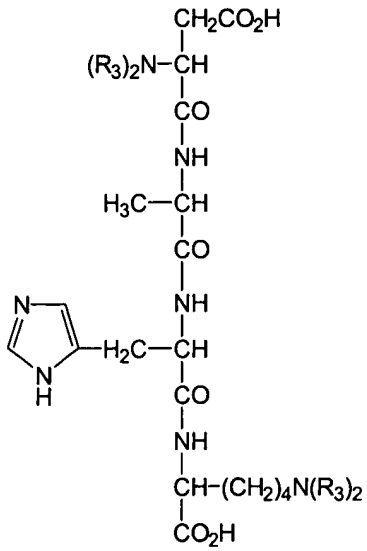












wherein:

R_1 is an alkyl, aryl, or heteroaryl;

R_2 is $-NH_2$, $-NHR_1$, $N(R_1)_2$, $-OR_1$, or R_1; and

R_3 is H, a non-peptide, metal-binding functional group or the two R_3 groups together form a non-peptide, metal-binding functional group.

520. (New) The method of Claim 519 wherein R_2 is $-NH_2$.

521. (New) The method of Claim 493 wherein the method further comprises administering an effective amount of another metal-binding compound in combination with the peptide.

522. (New) The method of Claim 521 wherein the metal-binding compound binds iron.

523. (New) The method of Claim 522wherein the iron-binding compound is deferoxamine mesylate.

524. (New) The method of Claim 521 wherein the metal-binding compound binds Cu(I).

525. (New) The method of Claim 524 wherein the Cu(I)-binding compound is a peptide.

526. (New) The method of Claim 525 wherein the Cu(I)-binding peptide comprises one of the following sequences:

Met Xaa_4 Met,

Met Xaa_4 Xaa_4 Met,

Cys Cys

Cys Xaa_4 Cys,

Cys Xaa_4 Xaa_4 Cys,

Met Xaa_4 Cys Xaa_4 Xaa_4 Cys,

Gly Met Xaa_4 Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:7],

Gly Met Thr Cys Xaa_4 Xaa_4 Cys [SEQ ID NO:8],

Gly Met Thr Cys Ala Asn Cys [SEQ ID NO:9], or

γ-Glu Cys Gly,

wherein Xaa_4 is any amino acid.

527. (New) The method of Claim 493 wherein the cancer is located in the kidney, liver, colon, breast, gastrointestinal tract or brain.

528. (New) The method of Claim 493 wherein the cancer is metastatic cancer.

529. (New) The method of Claim 493 wherein the cancer comprises a tumor.

530. (New) The method of Claim 529 wherein the tumor is located in the bladder, brain, breast, cervix, colon, rectum, kidney, lung, ovary, pancreas, prostate, stomach or uterus.